Table 6

Digital: Analog / 6:1

Cellular Operators Bandwidth Devoted to Analog: 10 MHz

Firms	Bandwidth	Effective Capacity*	Market Share	HHI Contribution
Cellular 1	35	160	17.4%	302
Cellular 2	35	160	17.4%	302
3	40	240	26.1%	681
4	40	240	26.1%	681
5	20	120	13.0%	170
Totals	170	920		2,136

<sup>\*</sup> Effective Capacity is defined as bandwidth devoted to digital multiplied by the ratio of digital's advantage over analog plus bandwidth devoted to analog.

Table 7

Digital : Analog / 6 : 1

Cellular Operators Bandwidth Devoted to Analog: 10 MHz

Initial Bandwidth	Effective Capacity*	Market Share	HHI Contribution	Acquired Bandwidth	Final Bandwidth	Effective Capacity*	Market Share	HHI Contribution
	<u> </u>					<u> </u>	01,2.0	- Commodition
35	160	17.4%	302	5	40	190	20.7%	427
35	160	17.4%	302		35	160	17.4%	302
40	240	26.1%	681		40	240	26.1%	681
40	240	26.1%	681		40	240	26.1%	681
20	120	13.0%	170	-5	15	90	9.8%	96
170	920		2,136		170	920		2,186
Himohana A			Initial HHI					
AITSCOMAN A	naiyaia		Final HHI	2,186				
	35 35 40 40 20	35 160 35 160 40 240 40 240 20 120	Bandwidth         Capacity*         Share           35         160         17.4%           35         160         17.4%           40         240         26.1%           40         240         26.1%           20         120         13.0%	Bandwidth         Capacity*         Share         Contribution           35         160         17.4%         302           35         160         17.4%         302           40         240         26.1%         681           40         240         26.1%         681           20         120         13.0%         170           170         920         2,136           Initial HHI           Change         Change	Bandwidth         Capacity*         Share         Contribution         Bandwidth           35         160         17.4%         302         5           35         160         17.4%         302         40           40         240         26.1%         681         681           20         120         13.0%         170         -5           170         920         2,136         Initial HHI         2,136           Hirschman Analysis         Change         50	Bandwidth         Capacity*         Share         Contribution         Bandwidth         Bandwidth           35         160         17.4%         302         5         40           35         160         17.4%         302         35           40         240         26.1%         681         40           40         240         26.1%         681         40           20         120         13.0%         170         -5         15    Initial HHI  2,136  Change 50	Bandwidth         Capacity*         Share         Contribution         Bandwidth         Bandwidth         Capacity*           35         160         17.4%         302         5         40         190           35         160         17.4%         302         35         160           40         240         26.1%         681         40         240           40         240         26.1%         681         40         240           20         120         13.0%         170         -5         15         90           Initial HHI         2,136           Lirschman Analysis         Change         50	Bandwidth         Capacity*         Share         Contribution         Bandwidth         Bandwidth         Capacity*         Share           35         160         17.4%         302         5         40         190         20.7%           35         160         17.4%         302         35         160         17.4%           40         240         25.1%         681         40         240         26.1%           40         240         26.1%         681         40         240         26.1%           20         120         13.0%         170         -5         15         90         9.8%           170         920         2,136         170         920

<sup>\*</sup> Effective Capacity is defined as bandwidth devoted to digital multiplied by the ratio of digital's advantage over analog plus bandwidth devoted to analog.

Table 8

HHI Calculations
Digital: Analog / 6:1

Cellular Operators Bandwidth Devoted to Analog: 10 MHz

Initial Bandwidth	Effective Capacity*	Market Share	HHI Contribution	Acquired Bandwidth	Final Bandwidth	Effective Capacity*	Market Share	HHI Contribution
35	160	17,4%	302	5	40	190	20.7%	427
35	160	17.4%	302		35	160	17.4%	302
40	240	26.1%	681	-5	35	210	22.8%	521
40	240	26.1%	681		40	240	26.1%	681
20	120	13.0%	170		20	120	13.0%	170
170	920		2,136		170	920		2,101
Hirschman A	nalvsis	•	Initial HHI Change	2,136 -35				
			Final HHI	2,101	•			
	35 35 40 40 20	35 160 35 160 40 240 40 240 20 120	Bandwidth         Capacity*         Share           35         160         17.4%           35         160         17.4%           40         240         26.1%           40         240         26.1%           20         120         13.0%	Bandwidth         Capacity*         Share         Contribution           35         160         17.4%         302           35         160         17.4%         302           40         240         26.1%         681           40         240         26.1%         681           20         120         13.0%         170           170         920         2,138           Initial HHI           Change         Change	Share   Contribution   Bandwidth   35   160   17.4%   302   5   35   160   17.4%   302   40   240   26.1%   681   -5   40   240   25.1%   681   20   120   13.0%   170   170   170   170   2,136   Change   -35	Bandwidth         Capacity*         Share         Contribution         Bandwidth         Bandwidth           35         160         17.4%         302         5         40           35         160         17.4%         302         35           40         240         26.1%         681         -5         35           40         240         26.1%         681         40         40           20         120         13.0%         170         20         20	Share   Contribution   Bandwidth   Bandwidth   Capacity*	Share   Contribution   Bandwidth   Bandwidth   Capacity*   Share

<sup>\*</sup> Effective Capacity is defined as bandwidth devoted to digital multiplied by the ratio of digital's advantage over analog plus bandwidth devoted to analog.

Table 9

HHI Calculations

Digital: Analog / 6: 1

	W	ith Analog Ha	ndicap (10N	Mz)	Without Analog Handicap				
Firms		Effective	Market	HHI		Effective	Market	HHI	
	Bandwidth	Capacity*	Share	Contribution	Bandwidth	Capacity*	Share	Contribution	
Cellular 1	25	100	10.9%	118	25	150	14.7%	216	
Cellular 2	25	100	10.9%	118	25	150	14.7%	216	
3	30	180	19.6%	383	30	180	17.6%	311	
4	30	180	19.6%	383	30	180	17.6%	311	
5	20	120	13.0%	170	20	120	11.8%	138	
6	10	60	6.5%	43	10	60	5.9%	35	
6 7	10	60	6.5%	43	10	60	5.9%	35	
8	10	60	6.5%	43	10	60	5.9%	35	
9	10	60	6.5%	43	10	60	5.9%	35	
Totals	170	920		1,342	170	1,020		1,332	
Herfindahi-H	lirschman And	nlysis		1,342				1,332	

<sup>\*</sup> Effective Capacity is defined as bandwidth devoted to digital multiplied by the ratio of digital's advantage over analog plus bandwidth devoted to analog.

Table 10

HHI Calculations
Digital: Analog / 1:1 Entry of Two SMRs with 5 MHz Each

	F	re-SMR En	itry	Post-SMR Entry				
Firms		Market	HHI		Market	HHI		
	Bandwidth	Share	Contribution	Bandwidth	Share	Contribution		
Cellular 1	25	14.7%	216	25	13.9%	193		
Cellular 2	25	14.7%	216	25	13.9%	193		
3	30	17.6%	311	30	16.7%	278		
4	30	17.6%	311	30	16.7%	278		
5	20	11.8%	138	20	11.1%	123		
6	10	5.9%	35	10	5. <b>6%</b>	31		
7	10	5.9%	35	10	5.6%	31		
8	10	5.9%	35	10	5.6%	31		
9	10	5.9%	35	10	5.6%	31		
SMR 10				5	2.8%	8		
SMR 11				5	2.8%	8		
Totals	170		1,332	180		1,204		
Herfindahi-H	irschman Ans	lysis	1,332			1,204		

Table 11A

Digital: Analog / 1:1 Entry of One SMR with 10 MHz

	P	re-SMR En	itry	Post-SMR Entry				
Firms		Market	HHI		Market	HHI		
	Bandwidth	Share	Contribution	Bandwidth	Share	Contribution		
Cellular 1	35	20.6%	424	35	19.4%	378		
Cellular 2	35	20.6%	424	35	19.4%	378		
3	40	23.5%	554	40	22.2%	494		
4	40	23.5%	554	40	22.2%	494		
5	20	11.8%	138	20	11.1%	123		
SMR 6				10	5. <b>6%</b>	31		
Totals	170		2,093	150	•	1,898		
Herfindahl-H	irschman Ans	lysis	2,093			1,898		

Table 11B

Digital: Analog / 1:1 One SMR with 10 MHz

Firms	Initial	Market	HHI	Acquired	Final	Market	HHI
	Bandwidth	Share	Contribution	Bandwidth	Bandwidth	Share	Contribution
Cellular 1	35	19.4%	378	5	40	22.2%	494
Cellular 2	35	19.4%	378		35	19.4%	378
3	40	22.2%	494		40	22.2%	494
4	40	22.2%	494		40	22.2%	494
5	20	11.1%	123		20	11.1%	123
SMR 6	10	5.6%	31	-5	5	2.8%	8
Totals	180		1,898		180		1,991
			Initial HHI	1,898			
nemnoani-H	Herfindahl-Hirschman Analysis		Change	93	-		
			Final HHI	1,991			

Table 12

CTIA PROPOSAL

HHI Calculations
Digital: Analog / 6:1

	W	ith Analog Ha	ndicap (10N	MHz)	Without Analog Handicap				
Firms		Effective	Market	Market HHI		Effective	Market	HHI	
	Bandwidth	Capacity*	Share	Contribution	Bandwidth	Capacity*	Share	Contribution	
Cellular 1	25	100	10.9%	118	25	150	14.7%	216	
Cellular 2	25	100	10.9%	118	25	150	14.7%	216	
3	20	120	13.0%	170	20	120	11.8%	138	
4	20	120	13.0%	170	20	120	11.8%	138	
5	20	120	13.0%	170	20	120	11.8%	138	
6	20	120	13.0%	170	20	120	11.8%	138	
7	10	60	6.5%	43	10	60	5.9%	35	
8	10	60	6.5%	43	10	60	5.9%	35	
9	10	60	6.5%	43	10	60	5.9%	35	
10	10	60	6.5%	43	10	60	5.9%	35	
Totals	170	920		1,087	170	1,020		1,125	
Herfindahl-H	lirschman And	nlysis		1,087				1,125	

<sup>\*</sup> Effective Capacity is defined as bandwidth devoted to digital multiplied by the ratio of digital's advantage over analog plus bandwidth devoted to analog.

Source: Charles River Associates.